

On inf-sup conditions and projections in the theory of mixed finite-element methods

Dautov R.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

We indicate constraints on the space of finite elements providing the validity of discrete inf-sup conditions and the existence of projections specific for mixed finite-element methods. We consider both conformal and nonconformal approximations. We suggest a definition of special projections onto the vector space of finite elements which provides their existence under quite general conditions without determining the degrees of freedom of the elements. © 2014 Pleiades Publishing, Ltd.

<http://dx.doi.org/10.1134/S0012266114070064>
